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as each egg has not to be separately packed. I have had eggs so arranged for over 30 years, and the cotton wool is as clean as when it was put in, showing that at any rate the boxes are dust-proof. We are fortunately not troubled with many insect pests, our great enemy being the damp, and this as a rule can be guarded against.

I enclose a few photographs showing the different sizes of the boxes. [Two of these photos are reproduced herewith.—ED.]

*Burnage, England.*

## A MONTH'S BIRD-COLLECTING IN VENEZUELA

By JOHN F. FERRY

AFTER a four days' sea journey from Panama, in a large English steamship, I arrived in La Guayra, Venezuela on April 21, 1908. An enormous mountain, La Sella, frowns down upon the little seaport huddling upon the narrow strip of shore at its base. The town is hot and unhealthy, and I was glad to spend but one night there and leave next morning for Caracas. The railroad journey thither is one of the most magnificent in the world. The steep ascent requires the track to wind in and out along the sides of deep canyons, and affords a view of the deep blue Caribbean sea and its palm-lined shore for great distances. The day after arriving in Caracas my bird-collecting, for the Field Museum of Natural History, began.

The valley in which Caracas lies is an extensive level plain surrounded by stately hills. To the north lies the great Sella mountain, which rises 9000 feet almost perpendicularly from the sea, one of the grandest spectacles in the world. Most of the mountains about Caracas are bare, the soil being red and sun-baked. Canyons are usually forested, as are also many of the mountain tops. The plain during the dry season is extremely arid and parched, but like our dry southwest the rainy season transforms such a waste into fields of waving grass and flowers. Irrigation is carried on extensively and fields of cane and other crops relieve the eye with their broad stretches of green. The little river Guaire flows thru the valley and most of its course is thru cultivated fields. Its banks are lined with dense brakes of cane. Coffee plantations are much in evidence. They are very attractive to the eye of the traveller. The coffee bushes resemble a miniature orchard, the trees being planted in rows and of a dark green color. The blossoms are beautiful and are very fragrant. But the most curious feature of the coffee plantation is the magnificent, tall shade trees whose branches interweave far overhead, and keep the hot tropical sun from the delicate coffee bushes. These plantations are usually favorite bird haunts; and particularly so in the Caracas Valley where there are practically no native forests. In these coffee plantations birds are found in surprising numbers, and here the collector strolls back and forth, often not knowing which one of several desired species to shoot, so great is the variety of birds there. One tall tree growing in the coffee plantations bears red, star-like blossoms which contain a small fruit. This tree is as popular with the birds as our choke-cherry tree at home, and often most of a morning's collecting was done beneath one tree. At one time I have seen several species of hummers, coerêbas, euethias, yellow warblers, flycatchers, several species of tanagers, orioles, paroquets, robin-like thrushes, grosbeaks and woodpeckers. The only difficulty encountered was the great height

of the tree, the food supply being greatest there, and the birds consequently more abundant.

Some low spurs of the mountains project into the valley, and deep arroyos often cut its surface. Where fire and the machete have not reached, a dense, thorny chaparral, woven with strong string-like vines, still remains. It is a safe refuge for the birds, and birds shot in its midst are usually beyond recovery. Its edges however make an excellent collecting ground. Several birds not seen elsewhere occur here.

One is the Rose-breasted Thrush (*Rhodinocichla*). It is a bird of remarkable beauty, its throat and breast being a deep pink. But what makes the bird interesting to me are the circumstances relating to its capture. While softly walking by the edge of the thickets above described, a strange rustling was frequently heard in the dead leaves under the bushes. Steal up as quietly as I might I could never get a glimpse of what might be causing it. My first thought was a snake, then a mouse, and for a time I believed it might be a huge beetle whose laborious walking might have produced the faint rustling sound. Often the sound began but a few feet from me and apparently in a spot which I could see perfectly. The experience was becoming actually uncanny, when at last one of many patient vigils had its reward. The strange sound this time came from a comparatively open area, and by putting my eye near the ground, I could get an uninterrupted view for some distance into the brush. At last the sound and its mysterious cause were associated. For an instant I saw a dark bird about the size of a towhee bunting, and quickly fired. The slatey black plumage of the bird was all I saw as I painfully made my way thru the thorns and vines, but when I took the bird in my hand I saw the exquisite pink of the breast and throat. Later I discovered why the bird's actions in the brush were so mysterious. It has the scratching habit of the towhee, but frequently stops only long enough to scatter a few leaves, and then a few noiseless hops take the bird to a different quarter where the scratching may be heard again. Thus the bird dodges hither and thither within a small area and while its presence is constantly betrayed to the ear, the eye cannot penetrate the dense thicket and discover the bird. Several other thrush-like birds have this habit, and all told, I was put to much vexation and loss of time in getting a few of these tormenting creatures.

One day while walking among the forlorn, brushy hills I was surprised to flush a covey of quail (*Eupsychortyx*). As they darted away they looked much like our own Bobwhite. To my despair the flock sought safety in a patch of the densest shrubbery, and I had to give up the pursuit with keen regret, as these quail seemed strangely out of place, so like our own bird, and yet so far from home. Fortunately my curiosity was satisfied; for a few days later I again flushed a flock, and this time took my chance at a wing shot, in the endeavor to keep my quarry from gaining the thicket. My surprise and delight were equal to each other, when the bird I singled out fell to the ground. At the time the bird seemed strikingly suggestive of both the California Valley Quail and the Bobwhite. On its head is a long tuft of tawny feathers, and on its breast a patch of chestnut, while its general body markings are quite similar to those of the Bobwhite. All their habits that I observed were typically quail-like.

A very dainty, curious bird is the tiny green paroquet (*Psittacula* sp.). It flies about the cultivated fields and among low trees, uttering a high-pitched note which is the subdued screech of its larger relatives. It climbs nimbly up and down weed stalks while feeding upon their seeds. These birds are tenacious of life, like all parrots, and unless killed outright, they will wriggle in among the

grass and leaves where they fall, and being entirely green themselves, they are seldom found when thus concealed.

A very interesting bird met in the vicinity of Caracas was a tiny woodpecker, about the size of one's thumb. Its plumage is of an odd pepper-and-salt pattern, being an admixture of black and white. It clammers slowly about twigs something after the manner of a nuthatch. The exquisite sky-blue tanager (*Tanagra cana* subsp?) was very abundant here and also a jet black species relieved only by white spots on the shoulders (*Tachyphonus*).

The whirr of humming-birds' wings was almost constantly in one's ears. An odd species was tolerably common here, its long white tail feathers causing it to gyrate in a singular manner as it hovered about a flower. The small finch (*Euethia* sp?), the males mostly black, the females olive gray, were abundant here and occurred in flocks about the borders of cultivated fields. The red-start (*Setophaga ruticilla*), water-thrush (*Seiurus noveboracensis* subsp?), and lesser yellow-legs were the only North American migrants seen here. Swifts were common but their rapid flight baffled my attempts to secure one. There were several varieties. A common bird among the brushy hills was one of the Dendrocolaptidæ (*Sittasomus* sp?). It has a note very like our song sparrow.

For two weeks I collected in the vicinity of Caracas, visiting two different localities, west of the city. A pleasant feature of my stay was several visits to the city itself. Travellers have written so much in regard to its present and historic interest, its beautiful buildings and its fascinating life that it is not necessary for me to speak of it here. I should like to add one word as to its climate. Its altitude is 4017 feet so that notwithstanding the fact that it is but ten degrees from the equator, it has a delightful climate, 65° to 70° the year around. The air has a soft, balmy quality which is not enervating.

In this respect Caracas is in marked contrast to La Guayra, its seaport, which lies over the range of mountains to the north. Tho only six miles in an air line from Caracas and 4000 feet below it, La Guayra is one of the hottest places in the world, having a temperature the year around of 100 degrees. It is a very unhealthy city, directly upon a low, flat coastal plane. While we were there the bubonic plague was raging, and we finally had to leave the country hurriedly by another port, because of the rigid quarantining of La Guayra, and the possibility of the same being done to other ports. How 900 bird-skins and two trunks full of personal property were held for months in La Guayra, and were actually reported as destroyed, but finally sent safely to this country, is a long story with an unexpectedly happy ending, but too long to relate here.

On April 6, 1908, Dr. Ned Dearborn of the Field Museum, arrived at La Guayra from Curacao, one of the Dutch West Indies, where he had been recently collecting, and we worked together for two weeks in Venezuela, when the aforesaid plague broke out, and we hurried out of the country. The following day, April 7, we left Caracas by train for the famous Valencia plains, where we made our headquarters in the thriving and attractive town of Maracay. Here we had most excellent collecting. The country was perfectly flat, being once the bed of the now comparatively small Lake Valencia. Occasionally low ridges or spurs of hills from the surrounding mountains project into this plain. Some of the land is marshy, and a small brook was utilized for irrigating a few adjacent plantations. Most of the country, however, was very dry, and thorny, almost leafless bushes covered most of landscape. The fringes of forest severely parched by the drought, harbored a great variety of bird-life, and the thirty or forty birds which the collector would find in his basket after about three hours' collecting is surprising to one

used to conditions in northern climes. This locality was remarkable for its number of large and handsome hawks. The Audubon Caracara and the Wood Ibis were welcome representatives of our own bird-life.

At Maracay we were objects of great interest to the inhabitants. A small army of boys and youths followed us into the fields each morning. They made successful collecting quite impossible, and how to get rid of them was a great problem. Simple forbearance was the main key to this problem's solution. By keeping up a brisk pace and purposely selecting cactus-grown and thorny spots—very trying to bare feet—we found the number constantly diminishing until but two or three hardy spirits still remained. These about balanced the account by retrieving birds shot, or pointing out others in the trees. These native lads showed a wholesome fear of our guns, and when we affected indifference as to their whereabouts, when we took aim, the timid ones gradually gave up the chase. While at work in a stone-walled room, with its iron-barred windows opening on the street, a crowd of curious faces always looked in on us, often hanging to the bars to get a better view, and in consequence shutting out much-needed light. Sometimes the room was almost filled with idle onlookers, but this proved not to be an unmixed evil; for several of our visitors were ones who proved of the greatest help to us. The most distinguished of these visitors was no less a personage than Señor Andrade, Castro's predecessor as president of Venezuela. He was a charming man—a perfect Castilian in manners and dignity. He readily offered to grasp our bloody hands as we rose from our taxidermy work to greet him. He showed a great interest in our work and cordially asked us to call upon him in his home at Caracas.

A very interesting character and one who later greatly aided us in our work, was a man from Texas, whose many years in Venezuela had been full of adventure. Being a mechanic by trade, he had designed a steel steamboat, suitable for the shallow waters of Lake Valencia. This boat had been constructed in Germany, shipped in parts to Venezuela and erected upon the lake by this ingenious and indomitable Yankee. He was known variously as "Captain" or "King of the Lake"; and his dominion was one of fact, for the poverty-stricken natives about the shores had no other practicable means of getting their scanty crops of coffee and bananas to the railroad. Different from what one might expect, this man was in no sense a tyrant, but was held in great esteem by the natives. Our common nationality made us friends with this man at once, and we gladly accepted his invitation to accompany him on his boat. A few days later I moved to Cabrera, a railroad station on the shore of the lake, where the Captain's steamer had its dock.

Dr. Dearborn in the meantime accepted the invitation of another of our visitors—an extremely pleasant gentleman—and in his company made a journey to this gentleman's estate high up in the mountains. Here were found a trogon and other birds not met at the altitude of the Valencia plains. Later Dr. Dearborn came to Lake Valencia. This lake is one of the scenic spots of Venezuela. Humboldt on his famous South American travels visited it, and his accounts fire one's imagination even now. Its placid, clear waters are surrounded by towering volcanic peaks, whose rugged, dark red slopes pitch directly into the lake. The shores are lined with rushes and occasional open forests of mimosa-like trees. Twenty-two hilly islands dot the lake's surface; twenty-two streams flow into it (tho not one flows out of it) and twenty-two kilometers is the length of the lake. Its area is sixty-six square miles and its altitude is 1200 feet. The lake abounds in mud flats and upon them and in the shallow water stand countless numbers of several varieties of herons, black-necked stilts and other waders; coots, ducks and grebes dot its surface. Among the rushes are seen tiny rails as well as larger ones. Immense flocks

of tree ducks circle over the lake uttering their shrill call "chiriri", from which the bird gets its native name. The wooded shores of the lake teem with land-birds and altogether this locality is an ornithologist's paradise.

Our first visit to the lake was marked by a cruise in the Captain's boat, and the day spent on the lake was one of incessant interest. Birds of many kinds were passing within gun shot of the boat almost continually, and occasionally we brought one down, but the Captain's kindness led us to use great restraint, for no sooner did a bird strike the water than he stopped the engine and had a boat lowered to retrieve the bird. The Everglade Kite, another friend from home, was common here, and the Snowy Heron (*Egretta candidissima*) and a large heron—at a distance an exact counterpart of our *Ardea herodias*—lent a familiar aspect where nearly all was strange and new. Graceful terns, pearl gray with black-tipped wings, were in sight most of the time. Occasionally a handsome large kingfisher (*Ceryle torquatus*) skimmed close to the water's edge while flying from one perch to another, and dainty little black flycatchers with white heads, occurred in abundance among the reeds at the water's edge. Crocodiles were everywhere, and one Dr. Dearborn secured with a well-aimed bullet from his three-barrelled gun.

Our most notable experience on Lake Valencia was our water-hog, capybara or "chiguiuri" hunt. The latter term is the one used by the natives to designate this huge rodent. This animal might be called an immense musk-rat the size of a sheep. Its terribly long incisors are one of its most striking characters. They are as long as one's fingers, sharp as chisels, and their fearful work was seen in the way they lacerated the dogs used in hunting them. The breast of one dog and the head of another were laid open in a most shocking manner by capybaras which were brought to bay by their pursuers. The animals have wide palmate feet and toes which serve them as well in swimming as in walking on land. For the native's zeal in joining our hunt we had a local custom to thank. The padres allow the flesh of these animals to be eaten during Holy week—the time we were there—because these quadrupeds spend much of their time in the water, and thus partly partake of the nature of fishes. A party of five excellent gentlemen from Caracas, Englishmen and Americans, were here for a hunting trip and they kindly included us in the water-hog hunt which was carried on as follows:

The party, increased to twenty or twenty-five by the addition of native hunters, divided into two parts, one taking the boats and keeping close to the outer edge of the rushes, the other going afoot on land. Four natives, stripped and carrying their long, sharp knives or machetes, entered the rushes with a troop of hound-like dogs. After a seemingly long wait, there was suddenly a furious yelling of men and barking of dogs. A violent swaying of the rushes showed the quarry was making for the lake, and in an instant more a huge tawny animal made a tremendous spring, clearing the rushes and striking the water with a great splash. With head just out of water it began a rapid swimming toward the open water. Every boat gave chase, and excitement became intense. With apparently little effect upon the animal, shot after shot was fired at its gliding form, from old muzzle-loader, modern shot-gun, rifle and revolver. After each fusillade the hard-pressed beast would dive, appearing often a long distance away. Again the boats would draw near and another volley would be fired. At last weakened by its need of air, and by many wounds, the luckless water-hog was nearly helpless and from a boat at its very side, a well-placed shot would finally end its gallant fight for life. Some eight or nine specimens were secured during the morning by the party in boats. The land party did not get a shot at a single animal. One of the best specimens

Dr. Dearborn and I carefully skinned, but the skin spoiled owing to our labors at Lake Valencia being ended by an unexpected event.

When we reached land after the hunt was over, we learned that La Guayra had been rigidly quarantined because of the appearance of bubonic plague in that port. The closing of Puerto Cabello, our only other means of egress from Venezuela, might follow at any moment, and we were advised to leave the country while we still had a chance. Accordingly we left by the first train the next day and were in Puerto Cabello that night. The journey was thru picturesque mountainous country, much of it being barren and sun-baked. The next day, by the rarest chance, I got an excursion boat sailing to Curacao, an island of the Dutch West Indies, while Dr. Dearborn pursued his labors a short time longer in Venezuela and took the first available steamer to New York.

*Field Museum of Natural History, Chicago, Illinois.*

### THREE VIREOS: NESTING NOTES FROM THE HUACHUCA MOUNTAINS

By F. C. WILLARD

WITH THREE PHOTOS BY THE AUTHOR

ONE of the most interesting families of birds as home builders is that of the Vireos. Three representatives of this family nest in the Huachuca Mountains, the Plumbeous (*Lanivireo s. plumbeus*), Stephens (*Vireo h. stephensi*), and Western Warbling (*Vireosylva g. swainsoni*), named in the order of their abundance. It was my good fortune to make a rather intimate acquaintance with all three of these species during the season of 1908.

The Plumbeous largely outnumbered the other two. It is rarely found below an altitude of 6000 feet on the east slope and 4000 feet on the west, nesting from its lowest range to the summit where I have found nests at an altitude of over 9000 feet. Every canyon has a numerous line of the Plumbeous Vireo along its bottom with scattering pairs in all the small side canyons and on the ridges. The nests are usually close to the ground, frequently within reaching distance. Oaks, ash, maples and sycamores are selected as nesting sites. Each pair has its claim staked out and ejects all intruders of the same species, altho the other two species are unmolested by Plumbeus even when nesting in close proximity.

In nest building they go as far as a quarter of a mile for material. They feed closer to the nest, however, probably at not over half this distance. The female does all the nest-building but is assisted somewhat by the male in the duties of incubation. He also feeds his mate on the nest, but this is done rather infrequently. My present observations give the time at intervals of from twenty minutes to half an hour. When doing so he sings close by the nest after feeding her and this has helped me locate several. The male also sings when the nest is approached, and once this year I saw one sitting on the nest and singing. Toward evening the male frequently flies down close to the nest and sits within a few inches of it for long periods, being perfectly quiet and motionless all the time.

The nest is a very pretty cup-shaped affair as is usual with this family. It is composed of grass-tops woven into a frame work and filled in with oak down and greenish colored oak blossoms and bits of spiders web. The lining is of fine grass tops from which all the seeds have been removed. The general appearance of a